

USSR

UDC 533.92.621.039.61

FARENIK, V. I., VLASOV, V. V., ROZHKOVA, A. M., STEPANOV, K. N.,  
SUPRUNENKO, V. A., and YAKIMCHUK, Yu. V.

"Study of the Radial Structures in the Oscillations of a Plasma  
Column in Crossed Fields With Cyclotron Resonance Instabilities"

Kiev, Ukrainskiy Fizicheskii Zhurnal, No 3, 1973, pp 394-396

Abstract: Experimental results are given for the investigation of cyclotron resonance instabilities in a collisionless rotating plasma in a uniform, longitudinal magnetic field. The basic experimental equipment is the same as that described in an earlier article (A. M. Rozhkov, et al, UFZh, 14, 1969, p 1856) except that this earlier equipment used crossed electric and magnetic fields. Experiments with the equipment of the present paper were conducted at a gas pressure of  $10^{-5}$  mm Hg. The curve plotted for the amplitude of the ionic cyclotron oscillations as a function of the uniform magnetic field intensity differs essentially from that for the nonuniform field. It was also found that oscillations of various frequencies were localized in different radial layers, and that the oscillation intensity was of a resonance nature. The authors thank V. L. Sizonenko and V. T. Tolok for their comments.

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UDC 533.916

ROZHKOV, A. M., STEPANOV, K. N., SUPRUNENKO, V. A., ~~FARENIK, V. I.~~

"Investigating the Excitation of Ion-Cyclotron Oscillations in a Plasma in Crossed Electric and Magnetic Fields"

Kiev, Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza, 1971, Naukova dumka, pp 14-18

Abstract: A description is given of experiments detecting unstable ion-cyclotron oscillations with a frequency of the order of the plasma rotational velocity. As a result of the development of the oscillations, high-energy ions with an energy of the order of 1 keV and a velocity direction along the magnetic field appear. The longitudinal and transverse wavelengths of the cyclotronic oscillations are of the order of 1 cm. At the beginning of the instability development, when the Larmor radius of the ions is much less than the radius of the plasma cylinder, the oscillations can be identified as longitudinal cyclotronic with a phase velocity along the magnetic field much less than the electron thermal velocity.

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ROZHKOV, A. M. et al, Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza, 1971, Naukova dumka, pp 14-16

As the plasma heats up due to the increasing instability, the Larmor radius increases to the point where it is commensurate with the system dimensions. A diagram of the experimental setup is presented along with an explanation of its operation. The authors suggest that study of this new type of plasma instability may be useful for understanding experimental results in the heating of the ionic plasma component, in which the radial electric field is either created deliberately or is spontaneously generated.

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USSR

UDC: 51:621.391

KALIKA, V. I., FARFEL', S. Ya.

"Remarks on the Solution of a Problem of Transport Type"

Ufa, Mat. metody v ekon. issled.--sbornik (Mathematical Methods in Economics Research--collection of works), 1971, pp 88-94 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V504)

[No abstract]

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USSR

FARFEL, V. S., Moscow Physiological Society

"Discussion of Training Criteria"

Moscow, Teoriya i Praktika Fizicheskoy Kultury, No 6, 1972, pp 60-62

Abstract: This is a continuation of the discussion of reports presented at the Moscow Physiological Conference. The conference was devoted to the development of a method by which it would be possible to establish the training criteria of athletes on the basis of heart beats. Although there are many factors related to the heart functions during physical exercises, the performance of athletes can be established by counting their pulse rate. It should be done in the following manner. The pulse count should start after 2-4 min of active physical exercise. This "transition time" is needed to stabilize the pulse rate, which does not correspond to the actual physical load during several min of exercises. The physical load should increase the pulse rate to 120-130 beats/min and not higher than 170 beat/min. Under these conditions the systolic blood volume reaches maximum and the minute blood volume is determined almost exclusively by the number of heart beats. Furthermore, the alveolar-venous difference with respect to the oxygen reaches a maximum level at this physical load, and the minute blood volume corresponds 1/2

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FARFEL', V. S., Teoriya i Praktika Fizicheskoy Kultury, No 6, 1972, pp 60-62

to the oxygen consumption volume. The aerobic processes develop fully and carbohydrates primarily undergo oxidation at this number of the heart beats. This makes it possible to calculate the oxygen consumption per energy unit. The efficiency coefficient does not change under these conditions. The number of heart beats under these conditions correspond to the physical exercise load. Reports of V. L. Karpman, V. S. Vaynbau, and P. P. Suslov which verify or supplement the above statement are analyzed.

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SUSLOV, F. P. and FARFEL', V. S., State Order of Lenin Central Institute of Physical Culture

"Athletic Performance in the Reacclimatization Period After Training in a Medium-Sized Mountain"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 11, 1972, pp 38-40

Abstract: Study of the literature, Western and Soviet, on the performance in competition of long-distance runners, walkers, ice skaters, etc. at various times following training at medium altitudes showed that the process of reacclimatization developed in wavelike fashion. The first 3 to 6 days after the training period was marked by good performances. This was followed by 5 or 6 days of poor performances when only one of three athletes did well in a meet. The ensuing 2 weeks again featured top performances, with four of five athletes doing exceptionally well. The authors do not offer any physiological explanation of the intermediate decline, but they do note that various factors can influence sports achievements at this time, e.g., intensity of the training in the mountains, type of sport, individual characteristics, etc.

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USSR

NEGREYEV, V. F., FARKHADOV, A. A., ABRAMOV, D. M., ALEKPEROVA, A. YU.

"Corrosion of Steel in Cooling Systems and Methods for Protection Against It"

Korroziya Stali v Okhlazhdayushchikh Sistemakh i Metody Zashchity [English Version Above], Baku, 1971, 144 pages.

Translation of Annotation: This book describes the corrosion characteristics of cooling water, taking into account various cooling systems, and discusses the basic causes for corrosion of steel equipment in cooling systems, factors influencing this corrosion, and methods of protection from it. The classification of inhibitors and modern interpretations of the mechanism of the protective action of various classes of inhibitors are studied as applicable to cooling media; the use of corrosion inhibitors is shown to be the most effective and economically suitable means for protection in moving corrosive cooling media.

Our studies of the mechanism of action of various inorganic and organic water-soluble steel corrosion inhibitors, both those used at the present time, and the new, more economical products and wastes of petrochemical production processes, are described in detail; serious attention is given to a new trend in this area, the combination of inhibitors, allowing complete prevention of corrosion in many cases.

The book is designed for scientific and engineering personnel who work on problems of corrosion of metals and methods of protection against it, as well as

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NEGREYEV, V. F., et al., Korroziya Stali v Okhlazhdayushchikh Sistemakh i Metody Zashchity, 1971, 144 pages

workers at industrial enterprises who work with equipment cooled by circulating cooling systems. It can also be used by students in higher and secondary special technical schools.

There are 36 Figures, 30 Tables, and 154 Biblio. Refs.

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NEGREYEV, V. F., et al., Korroziya Stali v Okhlazhdayushchikh Sistemakh i Metody Zashchity, 1971, 144 pages

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UDC: 51

KATKHAVOV, M. N., ~~FARKHUTDINOV, A. F.~~

"Optimizing Technological Production Information"

V sb. Primeneniye vychisl. tekhn. v mashinostr. (Use of Computer Technology in Machine Building--collection of works), Izhevsk, 1971, pp 110-116 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V586)

[No abstract]

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USSR

UDC: 621.317.8(088.8)

BADINTER, Ye. Ya., ZELIKOVSKIY, Z. I., KARASIK, N. Ya., PONYATOV, G. A.,  
SAVENKOV, A. N., FARMAKOVSKIY, B. V., TSETENS, V. P., SHIROKSHIK, K. A.

"A Resistor With a Winding of Cast Microwire in Glass Insulation"

USSR Author's Certificate No 287161, filed 24 Nov 69, published 1 Feb 71  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V334 P)

Translation: This Author's Certificate introduces a resistor wound with cast microwire in glass insulation. The body of the resistor is made from an electrical insulating material such as glass. To improve the stability of operational characteristics in the negative temperature region, the core and insulation of the microwire are made from materials whose effective temperature coefficient of expansion is close to that of the body material. A modification of the resistor is proposed which is distinguished by the fact that borosilicate electric vacuum glass is used as the insulating material, and a ternary or more complex alloy is used as the core material. The components of the alloy are taken in the following ratios (percent): Cr--8-12, Mn--8-16, Si--6-12, Mo--0.1-5, Re--less than 2.2, Ce--less than 1.2, Pr--less than 1.2, the remainder--Ni-Co.

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USSR

UDC: 621.315.3

FARMAKOVSKIY, B. V., AFONINA, L. G., VAKHRAMEYEV, V. I., LEYANOVA, S. V.,  
KRASIK, N. Ya., FIRSOV, A. M.

"Thermoresistive Cast Microwires in Glass Insulation"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology.  
Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 77-82  
(from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V416)

Translation: The authors present the technological properties of thermo-  
resistive alloys and the results of an investigation of the properties of  
microwires made from resistive alloy based on nickel with a temperature coef-  
ficient of resistance of  $(5-6) \cdot 10^{-3} \%$ /deg. Resumé.

1/1

1/2 . 031 UNCLASSIFIED  
TITLE--TEMPERATURE COMPENSATING ALLOY -U-

PROCESSING DATE--02OCT70

AUTHOR--(05)-AFONINA, L.G., FIRSOV, A.M., DEYANOVA, S.V., VAKHRAMPYEV,  
V.I., FARMAKOVSKIY, B.V.  
COUNTRY OF INFO--USSR F

SOURCE--U.S.S.R. 260, 892  
REFERENCE--OTKRYTIYA, IZOBRET., P  
DATE PUBLISHED--06JAN70

NYE ZNAKI 1970,

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METALLURGIC PATENT, TIN ALLOY, NICKEL, SILICON, BORDN, ALLOY  
COMPOSITION, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1990/1791

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0109752

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AA0109752

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMOCOMPENSATION ALLOY CONSISTS

OF NI 0.5-3, SI 0.5-3, B 0.01-0.1PERCENT, AND SN THE REMAINDER.

89

UNCLASSIFIED

1/2 048 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--POSSIBILITY OF AVERAGING THE OSCILLATION ANGLES OF A MOVING OBJECT  
DURING MEASUREMENTS OF VECTOR COMPONENTS OF THE TERRESTRIAL MAGNETIC  
AUTHOR-(02)-FARMAKOVSKIY, S.F., POPKOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. PRIBUROSTROYENIYE, 1970,  
NR 2, PP 91-96

DATE PUBLISHED-----70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--VECTOR ANALYSIS, AIRCRAFT, MAGNETOMETER, MAGNETIC FIELD,  
COORDINATE SYSTEM, NAVIGATION SYSTEM, RANGING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3007/1699

STEP NO--UR/0146/70/000/002/0091/0096

CIRC ACCESSION NO--AT0136940

UNCLASSIFIED



2/2 048

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0136940

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE CASE OF INDIRECT STABILIZATION OF MAGNETOMETERS ON A MOVING OBJECT (AIRCRAFT) THE VECTOR COMPONENTS OF THE MAGNETIC FIELD ARE MEASURED IN A COORDINATE SYSTEM ASSOCIATED WITH THE MOVING OBJECT. UPON SIGNALS FROM THE NAVIGATIONAL SYSTEMS ON THE OBJECT'S DEFLECTION ANGLES A COMPUTER CONVERTS THE COMPONENTS FROM THE MOVING OBJECT'S (AIRCRAFT) COORDINATE SYSTEM INTO THE GEOGRAPHIC. WHEN USING QUANTUM MAGNETOMETERS IT MUST BE REMEMBERED THAT THE MEAN VALUE OF THE COMPONENT DURING THE TIME OF A SINGLE MEASUREMENT IS GIVEN. THE NAVIGATIONAL SYSTEMS TRANSMIT CONTINUAL INFORMATION ON THE OBJECT'S DEFLECTION ANGLES. THE PROBLEM OF RELATING THE MEASURED COMPONENTS WITH THE DEFLECTION ANGLES IS EXAMINED THEORETICALLY. IT IS SHOWN THAT AVERAGING THE OSCILLATION ANGLES OF THE AIRCRAFT DURING A SINGLE QUANTUM MAGNETOMETER MEASUREMENT IS POSSIBLE IN THE CONVERSION OF THE SHIP'S VECTOR COMPONENTS OF THE TERRESTRIAL MAGNETIC FIELD INTO THE GEOGRAPHIC COMPONENTS. FACILITY: LENINGRADSKIY INSTITUT TOCHNOY MEKhanIKI I OPTIKI.

UNCLASSIFIED

USSR

621.317.444

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FARMAKOVSKIY, S. F., POPKOVA, L. I.

"Possibility of Averaging Rocking Angles of a Moving Object During Measurement of Components of the Earth's Magnetic Field Vector"

Leningrad, IVUZ Priborostroyeniye, Volume 13, No. 2, 1970, pp 91-96.

Abstract: When quantum magnetometers are used, one must consider that they output the average value of the corresponding component over the time of one measurement. Navigation systems output continuous information on the angles of rotation of the object. When conversions are made using computers, the problem arises as to which values of angles correspond to the measured components. In this article, the possibility is proven in principle of using the averaged angles of rotation of an object over the time of one measurement of the quantum magnetometer in converting ship components of the earth's magnetic field vector to its geographic components.

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FARMAKOVSKIY, S. F.

UDC 530.83.08  
 ERRORS IN A DEVICE FOR MEASURING DECLINATION AND INCLINATION  
 ANGLES

(Article by L. I. Pechkova, A. Ya. Rotshteyn, and S. F.  
 Farmaakovskiy, Leningrad, Geofizicheskaya Apparatura, Russian,  
 Vol 46, 1974, pp 20-23)

Errors in the device for measuring angles of declina-  
 tion D and inclination I, based on the method of electrical  
 stabilization of the auxiliary magnetic field vector  $H_0$   
 [Farmakovskiy, Rotshteyn, Pechkova, 1969] are due to a series  
 of independent causes of a random character [Pechkova, 1970].  
 Making use of the central boundary theorem [Venttsel', 1964],  
 we shall consider the law of distribution of the total  
 device error to be normal. Then the mean square error of  
 the device is determined by the expression

$$\sigma = \sqrt{\sum_{i=1}^n \sigma_i^2} \quad (1)$$

where  $\sigma_i$  is the error produced by the i-th random cause; n is  
 the number of random causes.

The device being examined utilizes information on the  
 object rotation angles from the orienting systems whose  
 minimum mean square error is  $\sigma_1$ . Its creation is justified  
 if all the remaining errors of the device will not augment  
 the total error in measuring angles D and I by more than 20%  
 in comparison to the error of orienting systems.

The basic components of the device error (with the  
 exception of the orienting system's error) are: 1) errors  
 in computing components of  $H_0$  in the computer-solver, which  
 is the coordinate converter (CC) on the sine-cosine revolv-  
 ing transformers (SCRT); 2) error of producing vector  $H_0$  in  
 the Helmholtz rings; 3) error of the quantum magnetometer

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JPRS 56099  
 25 May 72

USSR

UDC: 51:801

FARMAKOVSKIY, V. V.

"Concerning a Possible Approach to Construction of a Formalized Description of the Semantics of Natural Languages"

Moscow, Izbr. tr. Vses. mezhvuz. simpoz. po prikl. mat. i kibernet., Gor'kiy, 1967 (Selected Works of the All-Union Intercollegiate Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967), "Nauka", 1973, pp 375-377 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V720 by Ye. Burgina)

Translation: A theory is constructed for the relation between text, context and meaning of text. In this connection, text, context and meaning are considered as objects of a single nature -- a subset of some fixed set. The set  $G_p(q)$  is called the sense of the text  $q$  in context  $p$  if for each  $r$  of  $G_{C(r)} \subseteq G_p(q)$  there follows  $G_{C(p-q+r)} \subseteq G_{C(p)}(p-q+r)$  -- the text obtained from  $p$  by substituting  $r$  for  $q$ ). The corresponding formal system is an applied first-order functional calculus. By constructing functional models of the theory, its consistency and noncategorical nature are demonstrated.

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USSR

UDC: 519.2

FARMANOV, Sh. K., IBRAGIMOV, R.

"Limit Theorem for Branching Processes With Immigration in the Critical Case"

Nauch. tr. Tashkent. un-t (Scientific Works. Tashkent University), 1970, vyp. 394, pp 176-184 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V169)

Translation: Let  $\mu_n$  be the number of particles in the  $n$ -th generation of a critical branching process with immigration and with discrete time. It is proved that when the first two moments of  $\mu_n$  are finite, the random quantity  $\mu_n/M_n$  converges to gamma distribution as  $n \rightarrow \infty$ . B. Sevast'yanov.

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USSR

UDC: 621.373:530.145.6

FARSHTENDINER, V. L., TOLCHINSKAYA, R. M., KLYUYEV, V. P., BARANOV, B. A.,  
ANGERT, N. B.

"A Method of Making Monodomain  $\text{LiNbO}_3$  Crystals of  $0^\circ$  Orientation"

USSR Author's Certificate No 280450, filed 21 Jun 68, published 10 Dec 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D239 P)

Translation: This Author's Certificate introduces a method of making monodomain  $\text{LiNbO}_3$  crystals of  $0^\circ$  orientation. As a distinguishing feature of the patent, the size and yield of the output product are increased by annealing the crystal grown to the necessary dimensions at  $1160-1180^\circ\text{C}$  for 30-60 minutes under a voltage of 15-25 V, then cooling the crystal to  $1025-1125^\circ\text{C}$  while reducing the voltage by 25-40 percent followed by cooling of the crystal at a rate of  $25-30^\circ\text{C/hr}$ .

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USSR

UDC: 621.791.01:669.017.3:669.14:620.193

FARTUSHNYY, V. G., Candidate of Technical Sciences, and SAVCHENKO, V. S., Engineer,  
Electric Welding Institute imeni Ye. O. Paton

"The Effect of Structural Transformations in the Metal of the Thermal Effect Zone  
of EP410U Steel on Corrosion Resistance Under Atmospheric Conditions"

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 73, pp 29-30

Abstract: Magnetometric measurements were taken of specimens cooled at various temperatures in order to determine the temperature region of incomplete, reversible, martensite transformation. The results show that welded joints made from the EP410U grade steel are subject to corrosion cracking during product exploitation under atmospheric conditions. The "pitting" which appears as the result of atmospheric corrosion, also makes corrosion cracking possible. The pitting forms in the region of incomplete, martensite, reversible transformation as the result of the depletion of the solid solution by chromium. The presence in the studied grade of steel of elements with an affinity to carbon rather than chromium (for example titanium) inhibits the separation of chromium carbides and reduces the tendency to corrosion cracking of welded joints under atmospheric conditions.

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USSR

UDC 621.791.011:669.15-194

KAKHOVSKIY, N. I., FARTUSHIY, V. G., and SAVCHENKO, V. S., Institute of Electric Welding imeni YE. O. Paton, Academy of Science UkrSSR

"Effect of Silicon on the Weldability, Structure, and Properties of Austenitic Steel Weld Joints"

Kiev, Avtomaticheskaya Svarka, No 4, Apr 71, pp 9-13

Abstract: Weld seams of Cr-Ni steels containing 4-6% Si and up to 0.8% Nb were studied (grades OKh23N18, OKh20N20S2, OKh20N20S4, OKh20N20S5, and OKh20N29S6). Corrosion tests of steels with 4-6% Si with or without Nb exhibited selective corrosion of the heat-affected zone when exposed to 65% boiling nitric acid. Corrosion was much greater in those welds made in steels containing Si and Nb. Metallographic analysis showed that a second phase is precipitated from the austenite solid solution grain boundaries in the form of fine substrates almost encircling the entire grain. Tensile and yield strengths increase slightly with increased Si content while reduction in area and elongation tend to drop off and impact strength drops off sharply with increased Si content. Seven figures, 3 tables, 7 bibliographic references.

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Acc. Nr.: AP0046763

Ref. Code: UR0125

USSR

UDC 621.791.756:669.15-194

KAKHOVSKIY, N. I., FARTUSHENYY, V. G., DEM'YANENKO, G. P., ZAKHAROV, L. S.,  
LIPODAYEV, V. N., KAKHOVSKIY, YU. N., BRUSENTOVA, V. M., KOTOV, V. V.

"Welding of Chrome-nickel-molybdenum Single-Phase Austenitic Steel"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 39-43  
(from Avtomaticheskaya Svarka, No 1, 1970, p 80)

Translation: This article contains a study of the effect of manganese and nitrogen on crack resistance of purely austenitic welds. Chrome-nickel-manganese-molybdenum wire with nitrogen EP690 and ANV-17 electrodes for welding OKh17N16M2T, 00Kh17N16M3B and 000Kh16N15M3 steels have been developed. These developments insure uniform strength, uniform corrosion resistance of the joints made of these steels and sufficiently high plasticity and viscosity of the weld metal. There are 4 tables, 1 illustration and a bibliography with 15 entries..

Reel/Frame  
19790067

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1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--THE INCIDENCE OF UNILATERAL ABSENCE OF MOLARS -U-  
AUTHOR--FARUK, A.M.  
COUNTRY OF INFO--USSR  
SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 55-57  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ORAL DISEASE, DENTISTRY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/0505 STEP NO--UR/0511/70/049/003/0055/0057  
CIRC ACCESSION NO--AP0131128  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131128

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEALS WITH THE RESULTS OF EXAMINATION OF 800 PATIENTS WITH AN ABSENCE OF MOLARS OF DIVERSE LOCALIZATION. UNILATERAL ABSENCE OF MOLARS (INCLUDING COMBINED) WERE OBSERVED IN 260 (32.5 PLUS OR MINUS 1.6 PERCENT) PATIENTS. UNILATERAL SHORTENING OF THE DENTAL ARCH WAS NOTED ONLY IN 27 (3.4 PLUS OR MINUS 0.6 PERCENT) PERSONS. FACILITY: KAFEDRA ORTEPEDICHESKOY STOMATOLOGII KALININSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 547.546.183.621.193.4

DZHAFAROVA, N. A., BABAKHANOV, R. A., and FARZALIYEV, V. M., IKHP  
[Expansion Unknown], Academy of Sciences Azerbaydzhan SSR

"The Synthesis of Some Cycloalkylphenol Esters of Phosphorous Acid  
Which Serve as Oil Additives"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 4, 1972, pp 137-138

Abstract: Studies were conducted on the synthesis of various cycloalkylphenol esters of phosphorous acid, and on their efficacy as antioxidants and corrosion preventatives in lubricating oils. The cycloalkylphenols were obtained by cycloalkylation of phenol and cresols with cyclopentene in concentrated sulfuric acid. The esters were synthesized by reacting the cycloalkylphenols with  $\text{PCl}_3$  in the presence of triethylamine. The resultant esters were viscous liquids with a characteristic odor and were light brown in color. For evaluation of their antioxidant and anticorrosive properties the esters were added to lubricating oil DS-11 to a concentration of 1%. The results showed that certain of the phosphorous acid esters were effective as additives, and that esters containing the cyclohexyl radical were more effective than those with the cyclopentyl radical.

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1/2 038  
TITLE--ABOUT RECEIVING OF NAVIER STOKES EQUATIONS FOR STRUCTURE GASES BY  
MOMENTARY METHOD -U-  
AUTHOR--FARZAN, R.KH.

UNCLASSIFIED

PROCESSING DATE--16OCT70

COUNTRY OF INFO--USSR

SOURCE--VESTNIK LENINGRADSKOGO UNIVERSITETA, NO 1, MATEMATIKA, MEKHANIKA,  
ASTRONOMIYA, 1970, NR 1, PP 131-145  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NAVIER STOKES EQUATION, DIFFUSION COEFFICIENT, HEAT TRANSFER  
COEFFICIENT, GAS DIFFUSION, GAS VISCOSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1984/0355

STEP NO--UR/0043/70/000/001/0131/0145

CIRC ACCESSION NO--AP0055146

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0055146

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE SYSTEM OF STRUCTURE GAS  
MOMENTARY EQUATIONS IS USED TO OBTAIN NAVIER STOKES EQUATIONS.  
TRANSPORT COEFFICIENTS OF DIFFUSION VISCOSITY AND HEAT CONDUCTION ARE  
FOUND. THE RESULTS ARE COMPARED WITH THOSE RECEIVED BY ENSKOG CHAPMEN  
METHOD.

UNCLASSIFIED



ANNOTATION

Automatic gas detection systems, which are used extensively at the present time in the design of various automatic gas analyzers, are listed and discussed in this book. Automatic gas analyzers, are sensitive to density, viscosity, heat of combustion, dielectric constant, and other detection devices, are described in detail.

The problem of the development of equisensitive detectors for gas-chromatographic analyzers is elevated and examined for the first time in this book.

Aspects of the application of automatic gas detectors in certain new fields of automatic analytical control are examined. In addition, new methods of calibrating automatic detection systems are discussed at length.

This book is intended for scientists and engineers who are interested in the development of automatic gas analyzers.

L. A. Byunovskiy, Editor

Ye. N. Sal'makov, Editor-in-Chief

G. A. Galanchev, Technical Editor

G. G. Zhelazova, Proof Reader

Circulation - 4,000 copies

- b -



AA0046278- Farzane, N.G.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

241085 GAS DENSITY PULSE PICKUP consisting of gases preparation unit (1), the pickup unit (2), measurement and correcting the measurement circuit zero level unit (3), automatic compensation recorder (4) and a control unit (5).

1/70

The gas preparation unit (1) supplies the density pickup with air, carrier gas and the analysed gas. It comprises three similar circuits (6) consisting of a reducer with a filter (7), pressure gauge (8), throttle (9) for supply adjustment, and a rotameter (10) for consumption measurement. A pneumatic valve (11) stops the analysed gas flow shortly before sample collection in order to equalise the gas pressure with the atmospheric pressure. The instrument pickup (2) consists of a measurement unit (12), hydraulic resistance (13) and a measuring out device (14). The unit (12) is made of a tube of 6 mm internal dia. and 350 mm height. Air is supplied to the outer tube centre; its flow is maintained constant. The carrier gas is supplied to the middle tube centre from the hydraulic resistance (13).

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AA0046278

The supplied gases leave the unit through horizontal pipes. Sensing elements of a differential thermo-anemometer are placed in the horizontal pipes.

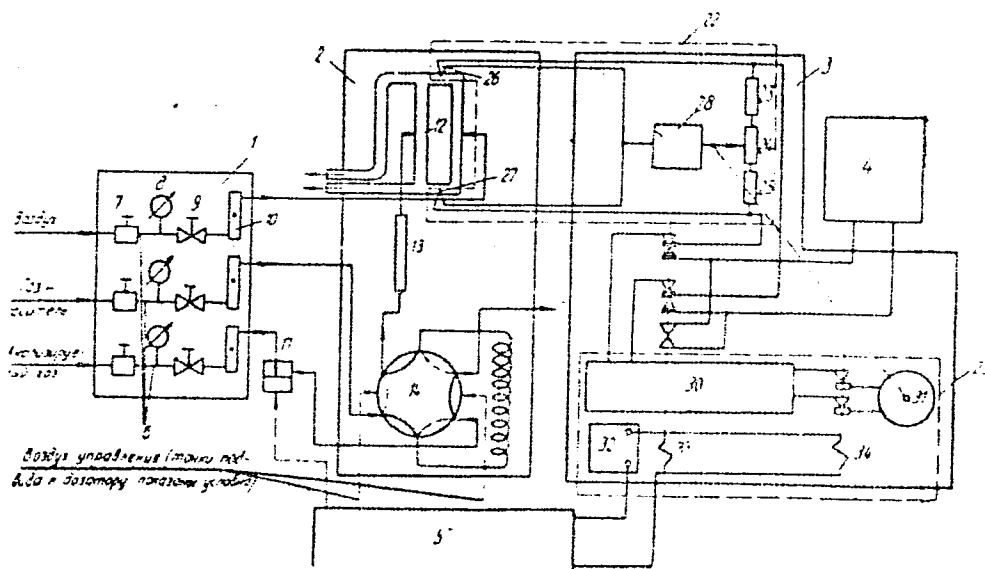
The measurement and correcting unit comprises an imbalance bridge (22) with resistors (23-25), whose two other arms are the thermoanemometer sensing elements (26,27), supplied for a stabilized voltage source (28). The bridge (22) automatic zero setting circuit (29) consists in turn of a phase sensitive amplifier (30), reversible motor (31), relay supply source (32) and d.c. relays (33,34).

13.3.67 as 1139292/26-25. FARZANE, N.G. et alia.  
(12.8.69) Bul 13/1.4.69. Class 421. Int.Cl.G Q1n.

AUTHORS: Farzane, N. G.; Ilyasov, L. V.

713  
19781417

AA0046278



3/3

19781418

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--THEORY OF SPIN WAVES IN A FERROMAGNETIC MATERIAL WITH A PERIODIC  
DOMAIN STRUCTURE -U-  
AUTHOR-(02)-FARZTDINOV, M.M., TUROV, YE.A.  
COUNTRY OF INFO--USSR  
SOURCE--FIZIKA METALLOV I METALLOVEDENIE, MAR. 1970, 29, (3), 458-470  
DATE PUBLISHED----MAR70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--MAGNETIC DOMAIN STRUCTURE, FERROELECTRIC MATERIAL, SPIN WAVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/0599 STEP NO--UR/0126/70/029/003/0458/0470  
CIRC ACCESSION NO--AP0129782  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129782

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERAL THEORY OF SPIN WAVES IN FERROMAGNETIC MATERIALS WITH PERIODIC DOMAIN STRUCTURES IS PRESENTED WITH A VIEW TO THEIR EFFECT ON THE MAGNETIC PROPERTIES OF FERROMAGNETIC METALS. THE THEORY IS BASED ON THE PRINCIPLE OF SECONDARY QUANTIZATION. IN SUCH FERROMAGNETICS, ELEMENTARY EXCITATIONS OF THREE DIFFERENT TYPES MAY OCCUR. TWO OF THESE CORRESPOND TO THE TRANSLATIONAL VIBRATIONS OF THE DOMAIN BOUNDARIES IN CO PHASE AND ANTIPHASE, RESP., WHILE THE THIRD CORRESPONDS TO ORDINARY SPIN WAVES IN DOMAINS WHICH HAVE BEEN SEVERELY DISTORTED BY INTERACTION WITH THE REST OF THE STRUCTURE.

UNCLASSIFIED

Acc. Nr:

AP0043700

MM- FARZDINOV

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy  
Fiziki, 1970, Vol 58, Nr 3, pp 918-928

THEORY OF SPIN WAVES IN ANTIFERROMAGNETIC  
SUBSTANCES WITH DOMAIN STRUCTURES

M. M. Farztdinov, A. A. Khallina

A theory of spin waves in antiferromagnetic substances with simple domain structures is developed by applying the method of second—quantized fields. The energy spectrum of elementary excitations is calculated for antiferromagnetic crystals of orthorhombic symmetry. It is shown that two modes of spin motion should exist in antiferromagnetic substances; three types of elementary excitations with different energy spectra should correspond to each of the modes of spin motion. The results are applied to an investigation of the properties of antiferromagnetic substances (thermal and resonance properties).

11  
REEL/FRAME  
19770105

fh

21

FASMAN AB

Acc. Nr:

AP0034226

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code:

UR 0023

71299h Water-dioxane-perchloric acid, water-dioxane-potassium tetrachloropalladate(II), and water-dioxane-potassium tetrabromopalladate(II) systems. Golodov, V. A.; Fasman, A. B.; Roganov, V. V.; Enker, K. P. (Kaz. Gos. Univ., Alma-Ata, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 236-9 (Russ). Effect of  $\text{HClO}_4$ ,  $\text{K}_2\text{PdCl}_4$ , or  $\text{K}_2\text{PdBr}_4$  addn. was studied on elec. cond., viscosity ( $\eta$ ), and d. of dioxane-water system at 25 and 45°. Addn. of  $\text{HClO}_4$  or  $\text{K}_2\text{PdX}_4$  ( $\text{X} = \text{Cl}$  or  $\text{Br}$ ) did not affect the nature of d. and  $\eta$  isotherms. Elec. cond. decreased with increasing concn. of dioxane in the mixt. due to decreased disson. of the additives studied. HMJR

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REEL/FRAME  
19710879

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--KINETICS AND MECHANISM OF HOMOGENEOUS CATALYTIC ACTIVATION OF  
CARBON MONOXIDE IN SOLUTIONS. VII. KINETICS OF CR SUB2 O PRIMEZ SUB7  
AUTHOR--(04)-FASHAN, A.B., IKHSANOV, ZH.A., PUSTYLNIKOV, L.M., LUKYANOV,  
A.T.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 401-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--REACTION KINETICS, CHEMICAL REDUCTION, CARBON MONOXIDE,  
CHROMIUM, PLATINUM ELECTRODE, CATALYST ACTIVITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/1222 STEP NO--UR/0076/70/044/002/0401/0405  
CIRC ACCESSION NO--AP0128640  
UNCLASSIFIED



2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128640

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HOMOGENEOUS CATALYTIC REDN. OF CR SUB2 O. SUB7 PRIME2 WITH CO IN MINERAL AND ORG. ACIDS FOLLOWS THE OVERALL PATTERN CR SUB2 O SUB7 PRIME2 NEGATIVE PLUS 3CO PLUS 8H PRIME POSITIVE EQUALS 2 CR PRIME3POSITIVE PLUS 3 CO SUB2 PLUS 4 H SUB2 O. THE KINETICS OF THIS REACTION IN AQ. SOLNS. OF H SUB2 SO SUB4 WAS STUDIED; AR DILD. CO WAS USED, H SUB2 (PDCL SUB4) SERVED AS A CATALYST, AND THE RATES WERE FOLLOWED POTENTIOMETRICALLY. RESULTS REVEALED AN ANOMALOUS DEPENDENCE OF THE DIMENSIONLESS D. OF THE GAS STREAM ON THE DIMENSIONLESS CRITERION OF HATTA, WHEN THE TEMP. AND THE AMT. OF CATALYST WERE CHANGED. THEORETICAL ANAL. WAS ATTEMPTED. RESULTS JUSTIFIED THE ADOPTION OF THE FILM THEORY OF ABSORPTION. EQUATIONS WERE DEVELOPED TO DET. THE CONC. OF THE GAS COMPONENT ALONG THE VERTICAL AXIS OF THE REACTOR. THE PROCEDURE IS BASED ON THE COMPARISON OF THE POTENTIAL OF A Pt ELECTRODE AT A GIVEN DEPTH WITH THE VALUE OF THE HATTA NO. FACILITY: KAZ. GOS. UNIV. IM. KIROVA, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--REACTION OF CARBON MONOXIDE WITH A GOLD ELECTRODE CATALYST -U-

AUTHOR--(03)-PADYUKOVA, G.L., FASMAN, A.B., SOKOLSKIY, D.V.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(4), 505-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBON MONOXIDE, CHEMICAL REDUCTION, METAL ELECTRODE,  
CATALYST, GOLD, CARBON DIOXIDE, CHEMICAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1998/1155

STEP NO--UR/0364/70/006/004/0505/0506

CIRC ACCESSION NO--AP0121714

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0121714  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERACTION OF CO WITH A 6 CM  
PRIME2 AU ELECTRODE WAS STUDIED IN N H SUB2 SO SUB4 AT 20-70DEGREES.  
CHARGING CURVES IN A H ATM. SHOWED THAT H WAS ADSORBED TO SIMILAR TO A  
3PERCENT COVERAGE. THE INTRODUCTION OF CO LED TO A SLIGHT SHIFT IN  
POTENTIAL TOWARD MORE NEG. VALUES, WHICH INDICATED THAT CO DISPLACED H  
FROM THE AU. CHROMATOGRAPHIC ANAL. SHOWED ONLY A VERY SMALL CONVERSION  
OF CO, SIMILAR TO 0.15PERCENT, TO CO SUB2. THE DATA INDICATED THAT  
THERE WAS ONLY A WEAK ATTRACTION BETWEEN AU AND CO. FACILITY:  
KAZ. GOS. UNIV. IM. KIROVA, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--MAGNESIUM PERBORATE PREPARATION -U-  
AUTHOR--(02)-BARINBERG, YE.O., FASTIVETS, S.I.  
COUNTRY OF INFO--USSR F  
SOURCE--U.S.S.R. 263,576  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(8)  
DATE PUBLISHED--10FEB70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL SYNTHESIS, CHEMICAL PATENT, MAGNESIUM COMPOUND,  
SODIUM BORATE, NITRATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/1836 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0132101  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0132101

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MG PERBORATE IS PREPD. BY REACTING  
MOISTENED MG(NO SUB 3)SUB 2 WITH NA PERBORATE, WITH SUBSEQUENT WASHING  
OF THE PRODUCT WITH H SUB 2 O.

UNCLASSIFIED

USSR

UDC 51:155.001.57:681.3.06

GOGINOV, V. I., FASTOVETS, N. O., KHURGIN, Ya. I.

"Practice of Application of Teaching Programs for Processing of Multivariant Files of Experimental Data"

Tr. Mezhdunar. Simpoziuma po Tekhn. i Biol. Probl. upr., 1968. Raspoznavaniye Obrazov. Adaptivn. Sistemy [Works of International Symposium on Technical and Biological Control Problems, 1968. Pattern Recognition. Adaptive Systems], Moscow, Nauka Press, 1971, pp 106-111, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V825 by the author's).

Translation: In solving specific problems of medical diagnosis, problems of functional description and prediction in geophysics and problems of identification of complex industrial objects, a long series of experiments was performed on the BESM-3M and M-220 computers. Processing of experimental results was performed using algorithms and programs developed at the laboratory of applied mathematics of the Moscow Institute of the Petrochemical and Gas Industry imeni I. M. Gubkin. The algorithms used allow: a) design of optimal, in some sense, rules in problems of regression and pattern recognition; b) use of additional information such as human estimation of the reliability of experimental data in problems of pattern recognition; c) automatic normalization of the decision rule to a scale convenient for human perception.

1/1

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USSR

UDC 681.39.06

F  
FASTOVETS, N. O., Moscow

"A Method of Optimizing Sorting in the Problems of Multidimensional Regression and Pattern Recognition"

Moscow, Avtomatika i Telemekhanika, No 3, 1970, pp 117-121

Abstract: This article contains an investigation of a sorting algorithm for informative attributes when solving the problems of multidimensional regression and pattern recognition. The proposed algorithm permits an essential reduction in sorting when finding informative attributes. A proof is presented for optimality of the investigated algorithm. Problems of the type arising in medical diagnostics having a set of attributes of large dimensionality on the order of hundreds are investigated. A procedure for deriving a rule permitting limitation of the sorting and, at the same time, reduction of machine time is examined. The recurrent procedure for deriving the rule which is optimal at each step is used for this purpose. This rule, including an analysis of errors arising when using it, is investigated in detail.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--CONCERNING CERTAIN METHODS OF OPTIMIZATION OF SURPLUS PROBLEMS OF  
MULTIDIMENSIONAL REGRESSION AND RECOGNITION OF IMAGES -U-  
AUTHOR--FASTOVETS, N.O.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 3, PP 117-121

DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--CORRELATION FUNCTION, ALGORITHM, FORM RECOGNITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1988/1463

STEP NO--UR/0103/70/000/003/0117/0121

CIRC ACCESSION NO--AP0106219

UNCLASSIFIED



2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70  
CIRC ACCESSION NO--AP0106219  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALGORITHM OF THE SELECTION OF  
THE INFORMATIVE ATTRIBUTES IN SOLVING THE PROBLEMS OF MULTIDIMENSIONAL  
REGRESSION AND THE RECOGNITION OF IMAGES IS CONSIDERED. THE ALGORITHM  
SUGGESTED ALLOWS TO CONSIDERABLY REDUCE PEREBOR IN DETERMINING  
INFORMATIVE ATTRIBUTES. THE PROFF OF THE OPTIMALITY OF THE ALGORITHM  
CONSIDERED IS PRESENTED.

USSR

UDC: 536.53

FASTRITSKIY, V. S., VAL'DMAN, A. B., Riga Polytechnical Institute

"A Device for Noncontact Measurement of the Temperature of a Moving Ferromagnetic Tape"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 73, Author's Certificate No 369432, division G, filed 12 May 71, published 8 Feb 73, p 118

Translation: This Author's Certificate introduces a device for noncontact measurement of the temperature of a moving ferromagnetic tape. The device contains a high-frequency oscillator which feeds a reference circuit and measurement circuit through cathode followers. The measurement circuit contains an eddy current pickup, and the tape to be checked is located in the field of this pickup. The device also contains a phase-sensing comparison unit and an output instrument. As a distinguishing feature of the patent, accuracy is improved by adding a controllable phase-shifter and a clipper amplifier and connecting them between the pickup and the comparison unit.

1/1

USSR

UDC: 621.317.332.1.088: 620.179.14

KIFER, I.I., SHKARLET, YU.M., FASTERITSKIY, V.S.,  
BONDARENKO, N.L. and KLYAGIN, YU.F.

"Estimate of Accuracy of Approximate Formulae for Calculation of  
Printed Transducer Impedance Due to Ferromagnetic Products"

Sb. Electromagnit. metody nerazrushayushch. kontrolya  
(Symposium on Electromagnetic Methods of Nondestructive Control)  
Minsk, Nauka i Tekhnika Publishing House, 1971, pp 91-101 (from  
Referativnyy Zhurnal-Metrologiya i Izmeritel'naya Tekhnika, No 8,  
1972, Abstract No 8.32.219)

Translation: Formulae derived by the authors are analyzed. It is  
shown that the results obtained from the approximate formulae are  
quite satisfactory in the range  $0.2 < \frac{|\mu|}{\beta_0} < 8.0$  with  $\alpha_3 > 0.85$ ,  
where  $|\mu|$  is the magnetic permeability of the product;  $\beta_0$  is the  
generalized parameter,  $\alpha$  is the relative distance between the  
1/2

USSR

KIFER, I. I., et al., Sb. Electromagnit. metody nerazrushayushch. kontrolya, Nauka i Tekhnika Publishing House, 1971, pp 91-101

transducer and the product. The errors relative to the results obtained by exact formulae in this case do not exceed 16% on permeability and 17° on the phase. Considering the simplicity of the approximate formulae (in spite of somewhat high errors), they can be used in the recommended range of parameters for the preliminary calculations of printed transducers (4 illustrations, 3 tables, 4 references).

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USSR

UDC 678.742.3.01:53

MAKEDOV, R. I., SADYKH-ZADE, S. I., SULTANOV, R. A., ALIYEV, G. D.  
ALI-ZADE, E. M., and FATALIYEV, A. G.

"Modification of Polypropylene With Organsphosphorus Compounds During the Reprocessing"

Moscow, Plasticheskiye Massy, No 6, 1973, pp 61-62

Abstract: Results of the investigation of thermal and optical ageing of a polypropylene sample modified by a diphosphite are described. It was established that addition of the diphosphite to the polypropylene retards the oxidation processes, this material exhibiting better indexes than polypropylene samples modified with synergistic mixtures of 0.3% of topanol KA + 0.5% of dilauryl thiodipropionate and the light stabilizer benzene CA. Addition of the diphosphite to the polypropylene increases considerably its elasticity preserving its starting strength and increasing its frost stability down to  $-30^{\circ}\text{C}$ .

1/1

Heat, Combustion, Detonation

USSR

UDC 536.244:66.015.23

SMOL'SKIY, B. M., EL'PERIN, I. T., FATEYEV, G. A., and TARASEVICH, L. I.

"The Effect of Conductive and Convective Heat Exchange on the Speed of the Reaction Zone's Motion in a Porous Body That Is Being Purged"

Minsk, Teplo- i massoperenos -- sb. (Heat and Mass Transfer -- Collection of Works), Vol 2, Part 2, 1972, pp 493-499 (from Referativnyy Zhurnal -- Teploenergetika, No 10, 1972, Abstract No 10G150)

Translation: The authors, who are employed by the Belorussian SSR Academy of Sciences' Institute of Heat and Mass Exchange and the Belorussian Polytechnic Institute in Minsk, analyzed the equations describing the steady temperature field in a reacting porous body that is being purged and, on the basis of this analysis, discovered the effect of the conductive and convective transfer of heat on the speed at which the reaction zone moves. They established that the effect of both types of heat transfer is analogous, although the analogy is not effective for the small Re numbers and the large values of the relative adiabatic combustion temperature that characterize the intensity of an internal heat source. The reason that the analogy is destroyed is related to the complication of the temperature profile's configuration near the reaction zone, for which the quadratic

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USSR

SMOL'SKIY, B. M., et al., Teplo- i massoperenos -- sb., Vol 2, Part 2, 1972, pp 493-499 (from Referativnyy Zhurnal -- Teploenergetika, No 10, 1972, Abstract No 10G150)

approximation of the profile that is the basic analogy becomes inadequate.  
(1 illustration; 4 bibliog. ref.)

2/2

- 27 -

USSR

FATEYEV. N. K.

"A Cell for Computing the Measure of Similarity of Speech Signals"

Moscow, Otkrytiya izobreteniya promyshlennyye obraztsy tovarnyye znaki, No 23,  
23 May 73, p 149

Translation: (11)383078(21)1671424/18-24(22) 2.06.71(51)G 06k 9/02(53)621.391.19  
(71) Minsk Radiotechnical Institute

A cell for computing the measure of similarity of speech signals, containing two groups of resistors and a peak detector is distinguished by the fact that it is simplified and the accuracy of calculation is improved by including series connected inverters, the inputs of which are connected to the corresponding groups of resistors, while the output is connected to the input of the peak detector and an emitter repeater, the input of which is connected to the output of the peak detector, while its output is connected to the output of the cell terminal.

1/1

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ADSORPTION OF THIOUREA ON MOLTEN GALLIUM -U-  
AUTHOR--(04)-BAGOTSKAYA, I.A., FATEYEV, S.A., GRIGORYEV, N.B., BARDINA,  
N.G.  
COUNTRY OF INFO--USSR  
SOURCE--ELEKTROKHIMIYA, MAR. 1970, 6, (3), 369-372  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ADSORPTION, THIOUREA, GALLIUM, ELECTRODE POLARIZATION, SURFACE  
ACTIVE AGENT, METAL PASSIVATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1988 STEP NO--UR/0364/70/006/003/0369/0372  
CIRC ACCESSION NO--AP0125577  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125577

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION OF THIOUREA,  $CS(NH_2)_2$ , ON MOLTEN GA WAS STUDIED BY A METHOD BASED ON MEASURING THE DIFFERENTIAL CAPACITY AT A GA ELECTRODE AND PLOTTING POLARIZATION CURVES. BOTH IN AN ACID AND IN A NEUTRAL SOLUTION THE POTENTIAL CORRESPONDING TO THE EVOLUTION OF  $H_2$  ON THE GA MOVED IN THE POSITIVE DIRECTION BY 0.3 V IN THE PRESENCE OF THIOUREA, ALTHOUGH THE SLOPE OF THE POLARIZATION CURVES REMAINED UNCHANGED. THESE RESULTS ARE INTERPRETED IN TERMS OF THE ADSORPTION OF THE ORTION IN SUCH SOLUTIONS. THUS INCREASING THE PRESSURE OF  $O_2$  OVER THE SOLUTION DISPLACED THE STATIONARY POTENTIAL IN THE POSITIVE DIRECTION AND REDUCED THE SELF DISSOLUTION CURRENT. FOR HIGH C.D. AND  $O_2$  CONCENTRATIONS INTENSIVE PASSIVATION TOOK PLACE; UNDER CONDITIONS OF SELF DISSOLUTION THE PASSIVATION WAS PARTIAL. THE PRESENCE OF SURFACE ACTIVE SUBSTANCES ALSO PLAYED A MAJOR ROLE IN PASSIVATION PROCESSES.

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC--  
CIRC ACCESSION NO--AP0140594  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESERPINE (2.5 MG-KG I.P.)  
POTENTIATION OF THE SPASMS INDUCED BY SUBSEQUENTLY (4 HR) ADMINISTERED  
BEMEGRIDE (0.2PERCENT SOLN. I.V. AT 0.05 ML-SEC) IN MICE WAS PREVENTED  
BY MALIC ACID BENZYL DIHYDRAZIDE (25 MG-KG) OR TRANYLCYPROMINE (5 MG-KG)  
ADMINISTERED BEFORE OR AFTER RESERPINE. FACILITY: RIZH. MED.  
INST., RIGA, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DIABETIC SYNDROME IN PERIARTERITIS NOBOSA -U-  
AUTHOR--FATEYEVA, I.S.  
COUNTRY OF INFO--USSR  
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 85-87  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--CARDIOVASCULAR SYSTEM DISEASE, PANCREATITIS, DIABETES  
MELLITUS, DIAGNOSTIC MEDICINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/0472 STEP NO--UR/0504/70/042/005/0085/0087  
CIRC ACCESSION NO--AP0121146  
UNCLASSIFIED

PATIENTS. ONE PATIENT WITH CHRONIC PERIARTERITIS NODOSA DEVELOPED DIABETUS MELLITUS FOLLOWED BY A HYPERGLYCEMIC COMA. THE DIAGNOSIS WAS CONFIRMED PATHOHISTOLOGICALLY. IN CASE OF THE AFFECTED PANCREAS PATIENTS WITH PERIARTERITIS NODOSA SHOULD BE INVESTIGATED TO REVEAL LATENT DIABETUS MELLITUS. FACILITY: TERAPEVTICHESKOYE OTD. BOL'NITSY NO 1, KRAMATORSK.

UNCLASSIFIED

USSR

FATEYEV. N. K.

"A Cell for Computing the Measure of Similarity of Speech Signals"

Moscow, Otkrytiya izobreteniya promyshlennyye obraztsy tovarnyye znaki, No 23,  
23 May 73, p 149

Translation: (11)383078(21)1671424/18-24(22) 2.06.71(51)G 06k 9/02(53)621.391.19  
(71) Minsk Radiotechnical Institute

A cell for computing the measure of similarity of speech signals, containing two groups of resistors and a peak detector is distinguished by the fact that it is simplified and the accuracy of calculation is improved by including series connected inverters, the inputs of which are connected to the corresponding groups of resistors, while the output is connected to the input of the peak detector and an emitter repeater, the input of which is connected to the output of the peak detector, while its output is connected to the output of the cell terminal.

1/1

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"APPROVED FOR RELEASE: 07/20/2001

CIA-RDP86-00513R002200730007-0

UNCLASSIFIED  
TITLE--ADSORPTION OF THIIOUREA ON MOLTEN GALLIUM -U- PROCESSING DATE--30OCT70  
AUTHOR--(04)--BAGGTSKAYA, I.A., FFATEYEV, S.A., GRIGORYEV, N.B., BARDINA,  
N.G.  
COUNTRY OF INFO--USSR  
SOURCE--ELEKTRGKHIMIYA, MAR. 1970, 6, (3), 369-372  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ADSORPTION, THIIOUREA, GALLIUM, ELECTRODE POLARIZATION, SURFACE  
ACTIVE AGENT, METAL PASSIVATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1988  
CIRC ACCESSION NO--AP0125577  
STEP NO--UR/0364/70/006/003/0369/0372  
UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001

CIA-RDP86-00513R002200730007-0"

UNCLASSIFIED

PROCESSING DATE--30OCT70

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CIRC ACCESSION NO--AP0125577  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ADSORPTION OF THIOUREA,  $\text{CS}(\text{NH})_2$ , ON MOLTEN GA WAS STUDIED BY A METHOD BASED ON MEASURING THE DIFFERENTIAL CAPACITY AT A GA ELECTRODE AND PLOTTING POLARIZATION CURVES. BOTH IN AN ACID AND IN A NEUTRAL SOLUTION THE POTENTIAL CORRESPONDING TO THE EVOLUTION OF H ON THE GA MOVED IN THE POSITIVE DIRECTION BY 0.3 V IN THE PRESENCE OF THIOUREA, ALTHOUGH THE SLOPE OF THE POLARIZATION CURVES REMAINED UNCHANGED. THESE RESULTS ARE INTERPRETED IN TERMS OF THE ADSORPTION OF THE ORTION IN SUCH SOLUTIONS. THUS INCREASING THE PRESSURE OF O OVER THE SOLUTION DISPLACED THE STATIONARY POTENTIAL IN THE POSITIVE DIRECTION AND REDUCED THE SELF DISSOLUTION CURRENT. FOR HIGH C.D. AND O CONCENTRATIONS INTENSIVE PASSIVATION TOOK PLACE; UNDER CONDITIONS OF SELF DISSOLUTION THE PASSIVATION WAS PARTIAL. THE PRESENCE OF SURFACE ACTIVE SUBSTANCES ALSO PLAYED A MAJOR ROLE IN PASSIVATION PROCESSES.



TITLE--EFFECT OF MALIC ACID DENAT. WITH  
RESERPINE POTENTIATING ACTION TOWARD BEMEGRIDE INDUCED SEIZURES  
AUTHOR--(03)-FATEYEV, V.A., BALTKAJS, J., BAUMANIS, E.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (5), 98-100.

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RESERPINE, MOUSE, MALIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO--FD70/605015/004 STEP NO--UR/0197/70/000/005/0098/0100

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC78

CIRC ACCESSION NO--AP0140594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESERPINE (2.5 MG-KG I.P.)  
POTENTIATION OF THE SPASMS INDUCED BY SUBSEQUENTLY (4 HR) ADMINISTERED  
BEMEGRIDE (0.2PERCENT SOLN. I.V. AT 0.05 ML-SEC) IN MICE WAS PREVENTED  
BY MALIC ACID BENZYL DIHYDRAZIDE (25 MG-KG) OR TRANYLCPROMINE (5 MG-KG)  
ADMINISTERED BEFORE OR AFTER RESERPINE. FACILITY: RIZH. MED.  
INST., RIGA, USSR.

UNCLASSIFIED

172 016 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DIABETIC SYNDROME IN PERIARTERITIS NODOSA -U-  
AUTHOR--FATEYEVA, I.S.  
COUNTRY OF INFO--USSR  
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 85-87  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARDIOVASCULAR SYSTEM DISEASE, PANCREATITIS, DIABETES  
MELLITUS, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/0472

STEP NO--UR/0504/70/042/005/0085/0087

CIRC ACCESSION NO--AP0121146

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 016

CIRC ACCESSION NO--AP0121146

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TOTAL OF 15 PATIENTS WITH PRIMARY SYSTEMIC VASCULITIS OF PERIARTERITIS NODOSA TYPE WERE UNDER OBSERVATION. SYMPTOMS OF CHRONIC PANCREATITIS WITH A DISTURBED INTRASECRETORY FUNCTION OF THE PANCREAS WERE REVEALED IN MOST OF THE PATIENTS. ONE PATIENT WITH CHRONIC PERIARTERITIS NODOSA DEVELOPED DIABETUS MELLITUS FOLLOWED BY A HYPERGLYCEMIC COMA. THE DIAGNOSIS WAS CONFIRMED PATHOHISTOLOGICALLY. IN CASE OF THE AFFECTED PANCREAS PATIENTS WITH PERIARTERITIS NODOSA SHOULD BE INVESTIGATED TO REVEAL LATENT DIABETUS MELLITUS. FACILITY: TERAPEVTICHESKOYE OTD. BOL'NITSY NO 1, KRAMATORSK.

UNCLASSIFIED

FATEYEVA, N.S.

RND / K-960 / S-920-73  
Date: 12

(2)

Fateyeva, N. S., and L. F. Vereshchagin. Melting curve of molybdenum up to 90 kbar. ZhETF P, v. 14, no. 4, 1971, 233-235.

A test is briefly described in which the melting curve of pure Mo under high pressure was measured by an optical method described earlier by the authors. The method is based on simultaneous determination of the radiation intensity ratios  $I_1/I_2$  and  $I_2/I_3$  of two pairs of narrow spectral regions, and their subsequent comparison with Planck's law. The experimental  $T(P)$  plots of Fig. 1 can be presented by the linear equation

$$T_M = 2083 + 0.8 \cdot 10^{-3} P \quad (1)$$

where  $T$  is melting point in  $^{\circ}K$  and  $P$  is the pressure in bars. The probable error is  $\pm 5^{\circ}K$  for both  $T$  and  $P$  measurements. A similar experiment was reported by Fateyeva et al on melting characteristics of graphite under high pressure [Explosion Effects Report No. 2, p. 58].

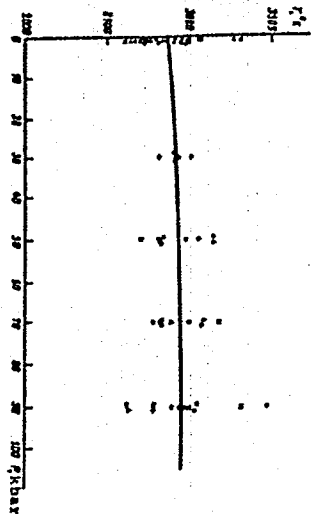


Fig. 1. Melting curve of Mo up to 90 kbar, calculated from all experimental points.  
+ - temperature data of  $I_1/I_2$  measurements.  
x - temperature data of  $I_2/I_3$  measurements.

UDC 539.89

USSR

FATEYEVA, N. S., VERESHCHAGIN, L. F., Academician

"Tantalum Melting Curve up to 60 Kilobars"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 5, 1971, pp 1060-1061

Abstract: A study was made of the melting curve of tantalum -- one of the most refractory metals. Experiments using tantalum containing a few tenths of a percent of niobium are described briefly. The melting point was determined in accordance with Planck's law by studying the sample, beginning with the intensity ratio for two narrow spectral intervals

$$I_1(\lambda_1)/I_2(\lambda_2) = f(T).$$

In comparing the intensity ratios  $I_1/I_2$  and  $I_2/I_3$  obtained experimentally, with the intensity ratios on the calculated calibration curve for the melting point of tantalum at atmospheric pressure ( $3,268 \pm 50^\circ\text{K}$ ) taken as the initial point for the measurements in the described experiments, a correction was introduced for selective absorption of the radiation by the vapor of the investigated substance surrounding the sample during heating.

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FATEYEVA, N. S., et al., Doklady Akademii Nauk SSSR, Vol 197, No 5, 1971, pp 1060-1061

The measurement results are plotted on a graph from which it is obvious that the melting point of tantalum increases with pressure, reaching 3,567°K at 60 kilobars. The experimental data can be represented by a linear equation

$$T_{\text{melt}} = 3,249 + 5.3 \cdot 10^{-3} P;$$

where  $T_{\text{melt}}$  is the melting point in °K, and P is the pressure in bars.

1/2 021

TITLE--ROLE OF PHOSPHOLIPIDS IN PANCREATIC SECRETION -U-

AUTHOR--(03)-BUKHVALOV, I.B., NECHAYEVA, N.V., FATEYEVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 1970, 12(1), 85-90

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHOSPHOLIPID, HISTOCHEMISTRY, PANCREAS, RAT, PROTEIN,  
SECRETION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/0457

STEP NO--UR/9053/70/012/001/0085/0090

CIRC ACCESSION NO--AP0117693

UNCLASSIFIED



2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117693

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOSPHOLIPIDS (I) WERE LOCALIZED HISTOCHEM. BY THE ACID HEMATEIN METHOD OF BAKER AND THE ROLE OF I IN DIFFERENT STAGES OF PANCREATIC SECRETION WAS STUDIED IN 24 HR FASTED RATS AND AT DIFFERENT INTERVALS (5, 15, 30, 45, AND 60 MIN) AFTER ADMINISTRATION OF FOOD TO FASTED ANIMALS. I ACTIVELY PARTICIPATED IN THE FORMATION OF ZYMOGEN GRANULES IN THE CELL MEMBRANES. THE POSSIBLE ROLE OF I IN TRANSMEMBRANAL TRANSFER OF SECRETORY PROTEIN, AS PROPOSED BY HOKIN AND HOKIN, IS DISCUSSED. HOWEVER, THE PRESENT FINDINGS ARE CONTRADICTORY TO THE ABOVE HYPOTHESIS. FACILITY: LAB. CYTOL. BIOCHEM., INST. DEVELOP. BIOL., MOSCOW, USSR.

UNCLASSIFIED

"APPROVED FOR RELEASE: 07/20/2001

CIA-RDP86-00513R002200730007-0

UNCLASSIFIED  
FILE--GAS CHROMATOGRAPHIC DETERMINATION OF HEATS OF ADSORPTION -U-  
AUTHOR--(05)--BEREZKIN, V.G., NIKITINA, N.S., FATEYEVA, V.M., STAROSTINA,  
N.G., STAROBINETS, L.L.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 19-21  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--GAS CHROMATOGRAPHY, ALKANE, UNSATURATED HYDROCARBON,  
ADSORPTION, HEAT OF SOLUTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/0642  
CIRC ACCESSION NO--AP0119554  
STEP NO--UR/0062/70/COG/001/0019/0021  
UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001

CIA-RDP86-00513R002200730007-0"

UNCLASSIFIED

PROCESSING DATE--230617

2/2 017

CIRC ACCESSION NO--AP0119554  
ABSTRACT/EXTRACT--(U) GP-0-

CHROMATOGRAPHIC METHOD MAY BE USED TO DET. THE HEAT OF ADSORPTION FROM AN IMMOBILE LIQ. PHASE TO A SOLID CARRIER SURFACE. THE HEAT OF SOLN. AND ADSORPTION OF ALKANES AND ALKYNES ON APEIZON K SUPPORTED BY THE CARRIER INZ-600 WAS DETD. ALKYNES GAVE HEATS OF ADSORPTION THAT ARE 5-8 KCAL-MOLE GREATER THAN THOSE FOR ALKANES, EXPLAINED BY SPECIFIC INTERACTION OF THE TRIPLE BOND WITH THE SUPPORT SURFACE. THE RESULTS FOR HEXANE, 1,HEXYNE, HEPTANE, AND 2,HEPTYNE ARE TABULATED. THE METHOD IS BASED ON THE DETN. OF THE RETENTION VOL. RELATIVE TO THE AMT. OF DEPOSITED LIQ. PHASE, FROM WHICH THE DISTRIBUTION COEFF. AT VARIOUS TEMPS. MAY BE CALCD.; THE CONTRIBUTION OF ADSORPTION TO THE RETENTION VOL. IS THEN ESTD.

FACILITY: INST. NEFTEKHIM. SIN. IM.

TOPCHIEVA, MOSCOW, USSR.

USSR

UDC 669.71.053.4.094

FATEYEVA, Z. T., KABUL'NIKOVA, S. L., ZADNEYEVA, V. M.

"Solubility of Iron Sulfate in Acid Solutions of Aluminum Sulfate with Acidity 200-550 g/l"

Nauch. Tr. Kazakhsk. Politekhn. In-t. [Scientific Writings of Kazakh Polytechnical Institute], Alma-Ata, 1971, pp 560-565, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G215 by G. Svodtseva).

Translation: When the sulfates of Al and Fe are simultaneously present in sulfuric acid solutions produced in the sulfuric acid method of processing of alumina-containing materials to  $Al_2O_3$ , their behavior in the solutions must be studied as a function of various factors. The solubility of  $Fe_2(SO_4)_3$  in acid solutions of  $Al_2(SO_4)_3$  is studied with acidity 200-550 g/l at 18-20°.

The solubility of  $Fe_2(SO_4)_3$  in the quaternary system  $Al_2O_3$ - $Fe_2O_3$ - $H_2SO_4$ - $H_2O$  depends on the quantity of solid phase taken for solution. The acidity of the final solutions of Fe and Al sulfates has a significant influence on their mutual solubility. The maximum solubility of  $Al_2(SO_4)_3$  with an acidity of the solution of 200 g/l is between 40-50 g/l as  $Al_2O_3$ , that of Fe sulfates reaches

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USSR

UDC 669.71.053.4.094

PATEYEVA, Z. T., KABUL'NIKOVA, S. L., ZADNEYEVA, V. M., Nauch. tr. Kazakhsk. Politech. In-t., Alma-Ata, 1971, pp 560-565.

130-138 g/l as  $\text{Fe}_2\text{O}_3$ . With an acidity of 300 g/l  $\text{H}_2\text{SO}_4$ , the content of  $\text{Al}_2\text{O}_3$  drops to 25-30 g/l, that of  $\text{Fe}_2\text{O}_3$  to 100 g/l. Increasing the acidity to 400-430 g/l practically does not change the solubility of  $\text{Al}_2(\text{SO}_4)_3$ , while it sharply decreases the solubility of Fe to 30-50 g/l as  $\text{Fe}_2\text{O}_3$ . The solubility of  $\text{Al}_2(\text{SO}_4)_3$  drops with acidity 450-550 g/l to 17-20 g/l  $\text{Al}_2\text{O}_3$ , that of  $\text{Fe}_2(\text{SO}_4)_3$  to 25-29 g/l with an acidity of 500 g/l and 10-11 g/l with an acidity of 550 g/l. 6 Figures.

2/2

- 2 -

USSR

UDC 669.71.053:4.094

ZADNEYEVA, V. M., ~~FATEYEVA, Z. T.~~, KABUL'NIKOVA, S. L.

"Solubility of Ferrous Sulfate in Sulfate Solutions of Aluminum Sulfate with Acidity 200-500 g/l"

Nauch. tr. Kazakhsk. Politekhn. In-t. [Scientific Writings of Kazakh Polytechnical Institute], Alma-Ata, 1971, pp 570-573, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G216 by G. Svodtseva).

Translation: The solubility of  $\text{FeSO}_4$  in sulfate solutions of  $\text{Al}_2(\text{SO}_4)_3$  is studied with acidity 200-500 g/l, temperature 18-20°. The dissolution of  $\text{FeSO}_4$  in  $\text{Al}_2(\text{SO}_4)_3$  solutions depends on the quantity of solid phase taken for solution, i.e., occurs by the colloid path. However, dissolution is possible, particularly in solutions with acidity 200-300 g/l, with relatively small quantities of  $\text{FeSO}_4$  in the solid phase; further increases lead to cementation of the entire mass of the solution and make separation of the solid from the liquid impossible. As the concentration of  $\text{H}_2\text{SO}_4$  in the solution increases to 400-470 g/l, the influence of the quantity of solid phase is significantly

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USSR

UDC 539.86

FATEYEVA, N. S., VERESHCHAGIN, L. F., Academician

"Tantalum Melting Curve up to 60 Kilebars"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 5, 1971, pp 1060-1061

Abstract: A study was made of the melting curve of tantalum -- one of the most refractory metals. Experiments using tantalum containing a few tenths of a percent of niobium are described briefly. The melting point was determined in accordance with Planck's law by studying the sample, beginning with the intensity ratio for two narrow spectral intervals

$$I_1(\lambda_1)/I_2(\lambda_2) = f(T).$$

In comparing the intensity ratios  $I_1/I_2$  and  $I_2/I_3$  obtained experimentally, with the intensity ratios on the calculated calibration curve for the melting point of tantalum at atmospheric pressure ( $3,268 \pm 50^\circ\text{K}$ ) taken as the initial point for the measurements in the described experiments, a correction was introduced for selective absorption of the radiation by the vapor of the investigated substance surrounding the sample during heating.

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FATEYEVA, N. S., et al., Doklady Akademii Nauk SSSR, Vol 197, No 5, 1971, pp 1060-1061

The measurement results are plotted on a graph from which it is obvious that the melting point of tantalum increases with pressure, reaching 3,567°K at 60 kilobars. The experimental data can be represented by a linear equation

$$T_{\text{melt}} = 3,249 + 5.3 \cdot 10^{-3} P:$$

where  $T_{\text{melt}}$  is the melting point in °K, and P is the pressure in bars.



1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ROLE OF PHOSPHOLIPIDS IN PANCREATIC SECRETION -U-

AUTHOR-(03)-BUKHVALOV, I.B., NECHAYEVA, N.V., FATEYEVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 1970, 12(1), 85-90

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHOSPHOLIPID, HISTOCHEMISTRY, PANCREAS, RAT, PROTEIN,  
SECRETION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/0457

STEP NO--UR/9053/70/012/001/0035/0090

CIRC ACCESSION NO--AP0117693

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117693

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOSPHOLIPIDS (I) WERE LOCALIZED HISTOCHEM. BY THE ACID HEMATIN METHOD OF BAKER AND THE ROLE OF I IN DIFFERENT STAGES OF PANCREATIC SECRETION WAS STUDIED IN 24 HR FASTED RATS AND AT DIFFERENT INTERVALS (5, 15, 30, 45, AND 60 MIN) AFTER ADMINISTRATION OF FOOD TO FASTED ANIMALS. I ACTIVELY PARTICIPATED IN THE FORMATION OF ZYMOGEN GRANULES IN THE CELL MEMBRANES. THE POSSIBLE ROLE OF I IN TRANSMEMBRANAL TRANSFER OF SECRETORY PROTEIN, AS PROPOSED BY HOKIN AND HOKIN, IS DISCUSSED. HOWEVER, THE PRESENT FINDINGS ARE CONTRADICTORY TO THE ABOVE HYPOTHESIS. FACILITY: LAB. CYTOL. BIOCHEM., INST. DEVELOP. BIOL., MOSCOW, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--GAS CHROMATOGRAPHIC DETERMINATION OF HEATS OF ADSORPTION -U-

AUTHOR--(05)-BEREZKIN, V.G., NIKITINA, N.S., FATEYEVA, V.M., STAROSTINA,  
N.G., STAROBINETS, L.L.  
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAO. NAUK SSSR, SER. KHIM. 1970, (11), 19-21

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS CHROMATOGRAPHY, ALKANE, UNSATURATED HYDROCARBON,  
ADSORPTION, HEAT OF SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/0642

STEP NO--UR/0062/70/000/001/0019/0021

CIRC ACCESSION NO--AP0119554

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119554

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIRECT GAS LIQ. CHROMATOGRAPHIC METHOD MAY BE USED TO DET. THE HEAT OF ADSORPTION FROM AN IMMOBILE LIQ. PHASE TO A SOLID CARRIER SURFACE. THE HEAT OF SOLN. AND ADSORPTION OF ALKANES AND ALKYNES ON APEIZON K SUPPORTED BY THE CARRIER INZ-600 WAS DETD. ALKYNES GAVE HEATS OF ADSORPTION THAT ARE 5-8 KCAL-MOLE GREATER THAN THOSE FOR ALKANES, EXPLAINED BY SPECIFIC INTERACTION OF THE TRIPLE BOND WITH THE SUPPORT SURFACE. THE RESULTS FOR HEXANE, 1,HEXYNE, HEPTANE, AND 2,HEPTYNE ARE TABULATED. THE METHOD IS BASED ON THE DETN. OF THE RETENTION VOL. RELATIVE TO THE AMT. OF DEPOSITED LIQ. PHASE, FROM WHICH THE DISTRIBUTION COEFF. AT VARIOUS TEMPS. MAY BE CALCD.; THE CONTRIBUTION OF ADSORPTION TO THE RETENTION VOL. IS THEN ESTD. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.71.053.4.094

FATEYEVA, Z. T., KABUL'NIKOVA, S. L., ZADNEYEVA, V. M.

"Solubility of Iron Sulfate in Acid Solutions of Aluminum Sulfate with Acidity 200-550 g/l"

Nauch. Tr. Kazakhsk. Politekhn. In-t. [Scientific Writings of Kazakh Polytechnical Institute], Alma-Ata, 1971, pp 560-565, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G215 by G. Svodtseva).

Translation: When the sulfates of Al and Fe are simultaneously present in sulfuric acid solutions produced in the sulfuric acid method of processing of alumina-containing materials to  $Al_2O_3$ , their behavior in the solutions must be studied as a function of various factors. The solubility of  $Fe_2(SO_4)_3$  in acid solutions of  $Al_2(SO_4)_3$  is studied with acidity 200-550 g/l at 18-20°. The solubility of  $Fe_2(SO_4)_3$  in the quaternary system  $Al_2O_3$ - $Fe_2O_3$ - $H_2SO_4$ - $H_2O$  depends on the quantity of solid phase taken for solution. The acidity of the final solutions of Fe and Al sulfates has a significant influence on their mutual solubility. The maximum solubility of  $Al_2(SO_4)_3$  with an acidity of the solution of 200 g/l is between 40-50 g/l as  $Al_2O_3$ , that of Fe sulfates reaches 1/2

USSR

UDC 669.71.053.4.094

FATEYEVA, Z. T., KABUL'NIKOVA, S. L., ZADNEYEVA, V. M., Nauch. tr. Kazakhsk. Politech. In-t., Alma-Ata, 1971, pp 560-565.

130-138 g/l as  $\text{Fe}_2\text{O}_3$ . With an acidity of 300 g/l  $\text{H}_2\text{SO}_4$ , the content of  $\text{Al}_2\text{O}_3$  drops to 25-30 g/l, that of  $\text{Fe}_2\text{O}_3$  to 100 g/l. Increasing the acidity to 400-430 g/l practically does not change the solubility of  $\text{Al}_2(\text{SO}_4)_3$ , while it sharply decreases the solubility of Fe to 30-50 g/l as  $\text{Fe}_2\text{O}_3$ . The solubility of  $\text{Al}_2(\text{SO}_4)_3$  drops with acidity 450-550 g/l to 17-20 g/l  $\text{Al}_2\text{O}_3$ , that of  $\text{Fe}_2(\text{SO}_4)_3$  to 25-29 g/l with an acidity of 500 g/l and 10-11 g/l with an acidity of 550 g/l. 6 Figures.

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- 2 -

USSR

UDC 669.71.053:4.094

ZADNEYEVA, V. M., ~~FATEYEVA, Z. T.~~, KABUL'NIKOVA, S. L.

"Solubility of Ferrous Sulfate in Sulfate Solutions of Aluminum Sulfate with Acidity 200-500 g/l"

Nauch. tr. Kazakhsk. Politekhn. In-t. [Scientific Writings of Kazakh Polytechnical Institute], Alma-Ata, 1971, pp 570-573, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G216 by G. Svodtseva).

Translation: The solubility of  $\text{FeSO}_4$  in sulfate solutions of  $\text{Al}_2(\text{SO}_4)_3$  is studied with acidity 200-500 g/l, temperature 18-20°. The dissolution of  $\text{FeSO}_4$  in  $\text{Al}_2(\text{SO}_4)_3$  solutions depends on the quantity of solid phase taken for solution, i.e., occurs by the colloid path. However, dissolution is possible, particularly in solutions with acidity 200-300 g/l, with relatively small quantities of  $\text{FeSO}_4$  in the solid phase; further increases lead to cementation of the entire mass of the solution and make separation of the solid from the liquid impossible. As the concentration of  $\text{H}_2\text{SO}_4$  in the solution increases to 400-470 g/l, the influence of the quantity of solid phase is significantly

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USSR

UDC 669.71.053:4.094

ZADNEYEVA, V. M., FATEYEVA, Z. T., KABUL'NIKOVA, S. L., Nauch. tr. Kazakhsk. Politekhn. In-t., Alma-Ata, 1971, pp 570-573.

less and at concentrations of 500 g/l, it has practically no influence on the quantity of  $\text{FeSO}_4$  which goes over into solution. 4 Tables.

2/2

" 3 "



USSR

UDC 669.71.053.4.065

PISMAREVA, V. A., ANTONTSEVA, A. Z., FATEYEVA, Z. T.

"Glass Enamel Facilitates Autoclave Sulfuric Acid Leaching of High-Silica Alumina-containing Materials"

Nauch. tr. Kazakhsk. Politekhn. In-t. [Scientific Writings of Kazakh Polytechnical Institute], Alma-Ata, 1971, pp 566-569, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G213 by G. Svodtseva).

Translation: A study was made of the process of sulfuric acid leaching of high-silica alumina-containing materials in autoclaves covered with enamel. These autoclaves showed advantages over lead-covered autoclaves: they are more compact and lighter, and withstand high temperatures (up to 500°); the solutions and sediments produced were pure, without Fe admixtures from the autoclaves; they are safer to use. A technology is described for coating of laboratory autoclaves with glass enamel and its compositions. Two coats of enamel are used: a base coat and the cover enamel. The enamels are baked at 900°. 2 Tables; 5 Biblio. Refs.

1/1

*Fatigarov, German Aleksandrovich* ..... *Nuclear Engineer*

CONFIDENTIAL - (Soviet) Dismissal

SECRET  
NO FOR DISSEM

Initials: *GM*

REMARKS: German Aleksandrovich, a nuclear engineer, born in October 1933, planning to go to USA to work.

Source: IDP/No, 30 June 1970.

SECRET  
NO FOR DISSEM

*2*

USSR

Ion Exchange

UDC 661.182.12.62.278.572.772.2

ASKAROV, M. A., DZHALILOV, A. T., NAZIROVA, R. A., ~~FATKULLAYEV, E.~~

"Synthesis of Interpolymer Ionite Membranes of Furan Ionites"

Tashkent, Uzbekskiy Khimicheskii Zhurnal, No 2, 1972, pp 43-45.

Abstract: Heterogeneous membranes based on furan ionites have good mechanical strength and thermal stability but insufficient electrochemical properties. In order to produce ionite membranes with good mechanical strength, thermal stability and high electrochemical properties, the authors synthesized interpolymer membranes by molecular combination of polyelectrolytes with thermoplastic polymers. The basic condition of synthesis of the interpolymer membranes is selection of a common solvent for the polyelectrolyte and inert polymer providing for their molecular combination. Interpolymer membranes are distinguished from heterogeneous membranes by their high exchange capacity and electrochemical properties. Thus, the interpolymer membranes produced, due to their high physical-chemical and electrochemical properties, can be used in processes of demineralization of water on electrodialysis installations.

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USSR

UDC 531.383

FATKHULLIN, E. F.

"Control of Vehicle Angular Motion Using Handwheels"

Kazan', Aviatsionnaya Tekhnika, No 4, 1972, pp 46-48

abstract: Full equations for the movement of a vehicle around its center of mass, and equations for the movement of three handwheels situated on the major axes of inertia are given. The problem of realization and stabilization of unperturbed motion is solved. The control functions found are formulated by means of completion of the system with the aid of existing monitors of angle and angular velocity, and computers.

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USSR

UDC 547.562+532.74+543.422

PETROV, S. M., PILYUGIN, V. S., EREDZHEPORIA, Z. A., and FATKULLIN, F. A.,  
Bashkir State University imeni 40-Letiya Oktyabrya.

"Study of the Reaction of Halogenated Phenols With Tributylphosphate and  
Trioctylphosphonoxide"

Leningrad, Zhurnal Obshchey Khimii, Vol 429(104), Vyp 4, 1972, pp 762-765

Abstract: The size of the equilibrium constant and the size of the bathochrome shift were studied for the reaction of various mono-substituted chloro-, bromo-, and iodophenols and the di-, tri-, tetra-, and pentachlorophenols with tributyl phosphate (TBP) and trioctylphosphonoxide (TOPP). The value of the equilibrium constant for the reaction of phenols with TOPP was larger than with TBP; however, the equilibrium constants for both of the above classes of reactions were significantly larger than previously reported values for the reaction of such phenols with ketones, amides, and sulfoxides. The value of the equilibrium constant for the title reaction due to hydrogen bonding is related to three factors: 1) the presence of intramolecular hydrogen bonding in the studied phenols; 2) the acidity of the phenol; and 3) the basicity of the acceptor (in this case the TBP and TOPP).

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Superalloys

USSR

UDC 669.24'25-154:669.24'784-154:532.6:532.14

IKSANOV, B. A., MINAYEV, Yu. A., FATKULLIN, O. Kh., GRIGORYAN, V. A., Moscow  
Institute of Steel and Alloys

"Characteristics of Surface Solutions and Densities of Alloys in the Ni-Co  
and Ni-C Systems"

Moscow, IVUZ. Chernaya Metallurgiya, No 5, 1972, pp 12-14

Abstract: The paper presents experimental results of measurement of density and surface tension in the region of formation of solid solutions based on the intermetallic compound  $\text{Ni}_3\text{Co}$ . An analysis is made of observed anomalies in surface properties which agree with data on negative deviations in the behavior of volumetric solutions, and are qualitatively described by the thermodynamic theory of surface tension of A. A. Zhukovskiy. The quiescent drop method was used with forced formation on a cylindrical alundum substrate and indirect induction heating. The specimens and substrates were preannealed in a vacuum of  $5 \cdot 10^{-5}$  mm Hg at  $1300^\circ\text{C}$ . Measurements were made in pure helium at temperatures of  $1500$ - $1650^\circ\text{C}$ . The temperature dependence of surface tension shows flattening of the maximum with an increase in temperature above the liquidus line. It was found that the heat of adsorption

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USSR

IKSANOV, B. A., et al., IVUZ. Chernaya Metallurgiya, No 5, 1972, pp 12-14

of cobalt increases over the entire range of concentrations. The results also confirm the previously observed weak surface activity of carbon. Adding carbon to nickel reduces the surface tension by 100 mJ per sq. m for every one percent of carbon added.

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USSR

UDC: 669.29.295:669.094.3

PERADZE, T. A., FATKULLINA, L. P., Institute of Metallurgy imeni A. A. Baykov

"Mechanical Properties and Thermal Stability of Alloys in the System Ti-Zr-Al with High Oxygen Content"

Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1973, pp 9-10.

Abstract: This work studies the mechanical properties of AK3 alloy (2.1% Al, 5.3% Zr, 0.35% O) at room temperature and at elevated temperatures, its thermal stability, long-term and fatigue strength. Annealing of the alloy over 950° C reduces ductility. At lower temperatures, the mechanical properties remain almost unchanged in comparison to annealing at 800° C, the lowest temperature used. The alloy was found to be thermally stable at 400, 500 and 600° for holding times up to 1000 hr. Short-term strength testing showed that the tensile strength stayed at 40 kg/mm<sup>2</sup> up to 500° C, then dropped sharply, the ductility increasing. However, deformation aging in the presence of interstitial atoms causes the ductility of the alloy to drop noticeably between 400 and 500°.

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PROCESSING DATE--11SEP70  
ON THE MECHANICAL  
AT LOW TEMPERATURES -U-

TITLE--EFFECT OF FIRST AND SECOND ORDER STRESSING  
PROPERTIES OF STAINLESS STEEL OKH20N4AG10 (NN3)  
AUTHOR--TALOV, N.P., LEBEDEV, D.V., FATKINA, A.M.

COUNTRY OF INFO--USSR

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CHROMIUM STEEL, LOW TEMPERATURE ALLOY, PLASTICITY, HEAT RESISTANT STEEL,  
COLD WORKING, AUSTENITICS STEEL/(U)AP319 HEAT RESISTANT STEEL, (U)NN3  
HEAT RESISTANT STEEL, (U)OKH20N4AG10 CHROMIUM STEEL

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CIRC ACCESSION NO--AP0106075  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT. ECONOMICALLY ALLOYED STAINLESS  
AUSTENITE STEEL 0KH20N4AG10 (NN3, AP319) HAS HIGH MECH. PROPERTIES AT  
LIQ.H TEMPS. STRESSES OF THE 1ST AND 2ND ORDER, ARISING AS A RESULTS OF  
THERMAL AND MECH. TREATMENTS (COLD WORK), SUBSTANTIALLY AFFECTS THE  
PLASTICITY OF STEEL BY LOWERING IT, PARTICULARLY THOSE STRESSES CAUSED  
BY MECH. TREATMENT. IN ORDER TO REMOVE THESE STRESSES FROM ARTICLES  
PREPD. FROM THIS STEEL, ANNEALING AT 440-600DEGREES FOR 3 HR AND FURNACE  
OR AIR COOLING FOLLOWING MECH. TREATMENT IS RECOMMENDED. THE  
POSSIBILITY OF THE EFFECT OF STRESSES OF THE 1ST AND 2ND ORDER, ARISING  
DURING HEAT AND MECH. TREATMENT OF THE SPECIMENS MUST BE TAKEN INTO  
ACCOUNT WHEN ESTG. THE MECH. PROPERTIES OF AUSTENITE STEELS AT LOW  
TEMPS. THE POSSIBILITY OF THE EFFECT OF THE POSSIBLE FORMATION OF  
MARTENSITE AND THE PRESENCE OF STRESSES MUST BE CONSIDERED WHEN ESTG.  
THE MECH. PROPERTIES AT MINUS 253DEGREESC.

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UDC 669.295'71'296'787:620.17

KORNILOV, I. I., PERADZE, T. A., VAVILOVA, V. V., FATEKULKINA, L. P., and  
KOROBOK, O. S., Institute of Metallurgy imeni A. A. Baykov

"Oxygen in Alloys of Titanium with Aluminum and Zirconium"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73,  
pp 36-39

Abstract: The effect of zirconium in alloys of titanium with aluminum and oxygen as well as oxygen in alloys with aluminum and zirconium was investigated with respect to the modulus of elasticity, electrical resistance, hardness, and mechanical properties. For alloys of the system Ti-2Al-0.350, the addition of 2% Zr leads to increased tensile strength with almost unchanged ductility. The addition of 5% Zr leads to an insignificant increase in tensile strength and an insignificant lowering of ductility. Alloying the Ti-5Zr-0.350 system with up to 3% Al causes a significant increase in tensile strength and insignificant lowering of ductility. When more than 3% Al is added the proportional limit for the modulus of elasticity is exceeded, thus indicating that 3% Al is the solubility limit. Analysis of the system Ti-2Al-5Zr alloyed with oxygen showed that addition of 0.5% O does not lead to alloy embrittlement as long as the Al content is within the solubility limits. Ductility of the alloy remains at 12-16% elongation and 30-35% reduction in area. On the basis of the investigations a secondary titanium

USSR

KORNILOV, I. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov,  
No 4, Apr 73, pp 36-39

alloy (Author's certificate 298677) was proposed containing 2% Al, 2-5% Zr,  
and 0.3-0.35% O. Five figures, one table, six bibliographic references.

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